

In the present invention, the carbon-carbon double bond encompasses conjugated double bonds, but does not encompass multiple bonds contained in aromatic rings. Specification at page 16, lines 2-4.

The resin composition can also contain a transition metal salt (C), which improves the oxygen scavenging function of the resin composition by facilitating the reaction of carbon-carbon double bonds with oxygen .

Claims 1, 15 and 29 are rejected under 35 U.S.C. § 102(b) over EP 0 814 126 ("EP-126"). In addition, Claims 1-16 and 19-37 are rejected under 35 U.S.C. § 103(a) over EP-126 in view of U.S. Patent No. 6,294,609 ("Bertin"). Claims 17-18 are rejected under 35 U.S.C. § 103(a) over EP-126 in view of EP 0 854 166 ("EP-166").

EP-126 discloses a polymer composition (C), with good barrier properties to gases, that comprises as main components an EVOH copolymer (A) and a block copolymer (B), which has a polymer block containing an aromatic vinyl monomer unit and a polymer block containing an isobutylene unit. EP-126 at abstract. Although EP-126's block copolymer (B) containing an aromatic vinyl monomer is unsaturated, it does not include a carbon-carbon double bond. As discussed above, the specification emphasizes that an aromatic ring does not contain carbon-carbon double bonds. Furthermore, EP-126 at page 4, lines 27-28, discloses that the isobutylene unit is $\text{-C(CH}_3\text{)}_2\text{-CH}_2\text{-}$, which does not include a carbon-carbon double bond.

The Office Action asserts with respect to EP-126 that:

Comparative example 1-3 on page 11 discloses EVOH polymer blended with *styrene isoprene block copolymers*. The resulting composition has *permeability* of 3 cc (cc = 1 ml). Office Action at page 6, section 9, lines 6-8.

However, EP-126 discloses:

In each of Comparative Examples 1-3, in a similar manner to Example 1 except that a sheet formed of polyamide ("UBE NYLON 1013B", tradename; product of Ube Industries, Ltd.) alone, a polymer composition composed of EVOH (U) and an *isoprene-styrene base block copolymer*

(SEPS) ("SEPTON 2002", tradename; product of Kuraray Co., Ltd.) or EVOH (V) alone was used instead of the sheet made of the polymer composition, hardness and oxygen permeability were measured. EP-126 at page 11, lines 18-22.

SEPS is a *hydrogenated* isoprene-styrene copolymer which does not have carbon-carbon unsaturation substantially. See the attached SEPTON catalog. Thus, the composition of EP-126 does not have oxygen absorption properties.

As noted above, the Office Action asserts that EP-126's composition has a "permeability" of 3 cc. However, one of the features of independent Claim 1 is a specific "oxygen absorption rate", which is quite different than "permeability".

As discussed in the Amendment filed January 12, 2004, EP-126 discloses that the polymer composition (C) can also include another polymer, such as isoprene rubber or butadiene rubber, "within an extent not substantially impairing the effects of the present invention". EP-126 at page 8, lines 9-13. EP-126 also discloses that

... [A] composition obtained by mixing an ethylene-vinyl alcohol base copolymer with a flexible resin tends to substantially lose the barrier properties which the copolymer originally has. EP-126 at page 2, lines 14-15.

Because the inclusion of isoprene or butadiene rubber in EP-126's polymer composition (C) in amounts sufficient to raise oxygen absorption to $0.01 \text{ ml/m}^2 \cdot \text{day}$ or more would negatively impact the gas barrier properties of EP-126's polymer composition (C), EP-126 fails to suggest the limitation of independent Claims 1, 2 and 29 that "an oxygen absorption rate of the resin composition is $0.01 \text{ ml/m}^2 \cdot \text{day}$ or more".

Furthermore, because EP-126's polymer composition does not contain a transition metal salt, EP-126 fails to suggest the limitation of independent Claims 15-16 and 29 of a "resin composition comprising ... a transition metal salt (C)".

Bertin is cited for disclosing "utilizing EVOH with two different saponification degrees as well as two different ethylene contents alters the permeability barrier property of

the composition." Office Action at page 6, section 9, lines 15-17. However, Bertin fails to remedy the deficiencies of EP-126.

EP-166 discloses a composition for scavenging oxygen comprises an ethylenically unsaturated hydrocarbon polymer and a transition metal catalyst. EP-166 at abstract. However, because, as discussed above, EP-126 discloses that adding flexible resins to EVOH causes the EVOH to lose the barrier properties that EP-126 desires, there is no motivation to combine the ethylenically unsaturated polymer of EP-166 with EP-126. Furthermore, there is no reasonable expectation that the combination of EP-166's transition metal catalyst with EP-126's polymer composition would result in the oxygen absorption rate of the present invention.

Thus, the various rejections over one or more of EP-126, Bertin and EP-166 should be withdrawn.

In view of the foregoing amendments and remarks, Applicants respectfully submit that the application is in condition for allowance. Applicants respectfully request favorable consideration and prompt allowance of the application.

Should the Examiner believe that anything further is necessary in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' representative at the telephone number listed below.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Norman F. Oblon
Attorney of Record
Registration No. 24,618

Corwin P. Umbach, Ph.D.
Registration No. 40,211

Attachment:
SEPTON catalog

Customer Number
22850

(703) 413-3000
Fax #: (703) 413-2220
NFO/CPU:sjh